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PACKAGED CROP PESTICIDE

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The design concerns a packaged crop pesticide. These pesticides are conventionally packaged in canisters, cans, and tubs made of plastic or in soft packagings which mostly consist of coated paper bags.

When using stable canisters, the danger that they may be damaged during storage and transport and that the crop pesticide can spill generally does not exist. However, canisters normally do not offer the possibility of an accurate removal in portions, if measurement vessels are not used hereby. Furthermore, canisters cannot be emptied without leaving residue and thus can be disposed of only at high cost, as special waste, because of the residue remaining in the canister which is not environmentally friendly.

The same is true, analogously, for most smaller packages or packagings in the form of closed cans, tubs, and the like, made of plastic, and for packaging bags made of paper or plastic film. Furthermore, such packagings are sensitive with respect to mechanical stresses, so that with

improper handling or during transport, they can easily rupture and then the uncontrolled leaking crop pesticide can soil other containers on the same transport pallet and contaminate the environment.

Bags made of water-soluble film have proved good as a packaging for powdered crop pesticides, since the user can place such bags containing crop pesticide in a prespecified portion unopened, for example, in a water-containing tank of a spray device, since the bag will dissolve in the water. A disposal of the packaging material is therefore dispensed with. Moreover, the possible leaking of powder from a bag which may be damaged is also not particularly critical, since mostly only a small part of the bag content is released and this can be more easily limited and removed than liquid leaking from such bags.

The use of bags made of water-soluble film for liquid and solvent-containing crop pesticides which are otherwise anhydrous would involve certain disadvantages, therefore, aside from the fact that this type of packaging is not transport-stable and can be easily damaged. Therefore, the attempt has already been made to package the filled bags in protective packagings made of cardboard, coated paper, and the like, which, however, did not prove good, since such materials are mostly not completely liquid-proof and will also tear, if, for example, the packaging with the contents falls on the floor or is exposed to impacts. A tearing of the bag has also frequently occurred, and the contents then leak through the packaging and contaminate the environment.

Therefore, one is left with packaging liquid crop pesticides in mechanically stable containers made of plastic, wherein one inevitably must accept the aforementioned difficulties connected with the disposal of the canisters and cannot utilize the advantages offered by a packaging in water-soluble bags.

This design is intended to solve the problems indicated. In particular, a packaging for liquid crop pesticides is to be proposed, with which its storage and transport can be designed in a safe manner. Furthermore, it should be possible to dispose of the packaging material in a simple manner and, for example, it will be possible to conduct the material to a reutilization process by means of recycling.

This is attained, in accordance with the invention, by a packaging in which the solvent-containing crop pesticide which is, however, free of water is placed in a portion in at least one closed bag made of water-soluble film, wherein there is at least one bag in a stable container made of metal which is closed tightly with a lid.

With appropriate dimensioning of its walls, such a container forms a packaging which withstands even high mechanical stresses and offers sufficient protection for the bag(s) contained in it. Furthermore, the closed container offers secure protection against the leaking of the crop pesticide, if it should happen that, for example, a bag should be damaged when it is introduced or removed from the container. Also, a soiling or contamination of adjacent containers, for example,

during transport is reliably avoided, if a bag should be leaky or should develop a leak in one of the containers.

Moreover, such a packaging for several bags also has the advantage that, after removing the container lid, it is possible to remove the crop pesticide in portions without any problems and the container can be closed tightly once more by placing the lid on it. A renewed closing of the container is, of course, not absolutely necessary if it holds only one single bag. In this case, the obvious thing to do would be to have the lid as a closure which can be torn open.

The container and lid are appropriately made of tin plate, which is smooth, on the inside and outside, and resistant to the solvent contained in the crop pesticide. Also, metal containers rather than plastic canisters can again be conducted to the same application purpose or subjected to a recycling process.

In the drawing, two exemplified embodiments for packagings, in accordance with the invention, are shown in longitudinal section.

Figure 1 shows a can 1 as a container which in this case holds, standing, only one bag 2 containing a crop pesticide. Above, the can is closed tightly with a lid 3. Since after removing the one bag from the container 2 it is not necessary to close it again, a tear-open lid which remains connected with the can can be used in accordance with the depiction.

In the embodiment according to Figure 2, the container 1 contains several bags 2 and is closed with a lid 3, which is stuck into the container opening and accordingly forms an insertion lid, with which the opened container can again be closed tightly after removing bags.

Instead of relatively small cans as containers, buckets, vats, and the like, with a greater volumetric capacity can be taken into consideration.

Although tin plate is particularly suitable as the container and lid material, container cans and their lids can be made, above all, of aluminum also. As material for the bags, PVAL film (polyvinyl alcohol) is appropriately used, which dissolves upon contact with water and is sufficiently resistant to the solvent contained in the crop pesticide.

Claims

1. Packaged liquid or solvent-containing and anhydrous crop pesticide, which, in portions, is placed in at least one closed bag (3; sic; 2) made of water-soluble film, wherein at least one bag (3) is in a stable container (1) made of metal, which is tightly closed with a lid.

2. Packaged crop pesticide according to Claim 1, characterized in that the container (1) and the lid (3) are made of solvent-resistant tin plate.

